

UNITED STATES PATENT AND TRADEMARK OFFICE
DOCUMENT CLASSIFICATION BARCODE SHEET



CATEGORY:

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CONTACT IF FOUND:

FORM PTO-1390
(REV 12-29-99)

U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

ATTORNEY'S DOCKET NUMBER

TRANSMITTAL LETTER TO THE UNITED STATES
DESIGNATED/ELECTED OFFICE (DO/EO/US)
CONCERNING A FILING UNDER 35 U.S.C. 371

41145

U.S. APPLICATION NO. (If known, see 37 CFR 1.5)

09/743710

INTERNATIONAL APPLICATION NO.
PCT/EP98/04832INTERNATIONAL FILING DATE
August 3, 1998PRIORITY DATE CLAIMED
August 3, 1998TITLE OF INVENTION
METHOD FOR PRODUCING A SHAPED FOAM BODY, ESPECIALLY A FOAM PADDING ELEMENT FOR A VEHICLE SEATAPPLICANT(S) FOR DO/EO/US
KONSTANTINOS POULAKIS; AXEL SCHULTE

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. ☒ This is a **FIRST** submission of items concerning a filing under 35 U.S.C. 371.
2. ☐ This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 U.S.C. 371.
3. ☐ This express request to begin national examination procedures (35 U.S.C. 371(f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371(b) and PCT Articles 22 and 39(1).
4. ☒ A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date.
5. ☒ A copy of the International Application as filed (35 U.S.C. 371(c)(2))
 - a. ☒ is transmitted herewith (required only if not transmitted by the International Bureau).
 - b. ☐ has been transmitted by the International Bureau.
 - c. ☐ is not required, as the application was filed in the United States Receiving Office (RO/US).
6. ☒ A translation of the International Application into English (35 U.S.C. 371(c)(2)).
7. ☒ Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3))
 - a. ☐ are transmitted herewith (required only if not transmitted by the International Bureau).
 - b. ☐ have been transmitted by the International Bureau.
 - c. ☐ have not been made; however, the time limit for making such amendments has NOT expired.
 - d. ☒ have not been made and will not be made.
8. ☐ A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).
9. ☒ An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).
10. ☒ A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).

Items 11. to 16. below concern document(s) or information included:

11. ☒ An Information Disclosure Statement under 37 CFR 1.97 and 1.98.
12. ☒ An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.
13. ☒ A **FIRST** preliminary amendment.
☐ A **SECOND** or **SUBSEQUENT** preliminary amendment.
14. ☐ A substitute specification.
15. ☐ A change of power of attorney and/or address letter.
16. ☒ Other items or information:
Translation of Preliminary Examination Report

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of :
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 KONSTANTINOS POULAKIS ET AL. : PATENT
 :
 Serial No.: NEW : Group Art Unit:
 :
 Filed: Herewith : Examiner:
 :
 For: METHOD FOR PRODUCING A SHAPED :
 FOAM BODY, ESPECIALLY A FOAM :
 PADDING ELEMENT FOR A VEHICLE :
 SEAT :

JC07 Rec'd PCT/PTO 16 JAN 2001

PRELIMINARY AMENDMENT

Commissioner for Patents
 Washington, D.C. 20231

Sir:

Preliminary to examination and calculation of the filing fee, please amend the above-identified application as follows:

Claim 4, line 1, change "Claims 1 to 3" to -- claim 1 --.

Claim 5, line 1, change "one of the Claims 1 to 4" to -- claim 1 --.

Claim 6, line 1, change "one of the Claims 1 to 5" to -- claim 1 --.

Claim 8, line 1, change "one of the Claims 1 to 7" to -- claim 1 --.

REMARKS

The above changes eliminate multiple dependency in the claims.

Respectfully submitted,



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Dated: Jan 13, 2001

FOR "OFFICE" OF RECORD

-1-

Method for Producing a Shaped Foam Body, Especially
a Foam Padding Element for a Vehicle Seat

The invention relates to a method for producing a foam body part, especially a foam padding element for a vehicle seat, which is provided with at least one adhesive closing part with adhering elements, wherein the adhesive closing part is arranged in a foaming mold producing the foam body part in such a manner that the adhering elements are protected against the penetration of foam by a foam-inhibiting covering which is arranged on the side of the adhesive closing part opposite the adhering elements with a predetermined border width overlapping the surface area of the adhering elements and is brought into releasable contact at least with parts of the foaming mold by means of a magnetic holding device, and the covering is provided with ferromagnetic component parts and at least one permanent magnet is provided on the foaming mold.

One method of this type is already known from the document WO-A-86 03164. One drawback with the known method is that the adhering elements of the adhesive closing part are not securely protected by means of the foam-inhibiting covering against a penetration of foam material. In order to guarantee the capacity of the adhesive closing parts to function, however, it is essential during the foaming process

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that adherence of the adhesive elements to each other by penetrating foam material be avoided.

Starting from this state of the art the invention proposes a method which facilitates the production of shaped foam bodies with adhesive closing parts foamed into the foam in an especially secure manner, whereby particularly the danger that foam material penetrating into the area of adhering elements leading to an adherence of the same is avoided.

With one method of the aforementioned type this problem is solved according to the invention in that the covering is provided with a ferromagnetic coating and that permanent magnets are used on the foaming mold in such a layered arrangement that they cooperate with the borders of the covering overlapping the surface area incorporating the adhering elements.

In an advantageous manner then the borders surrounding the area of the adhering elements are held in these border areas by effective magnetic forces in tight, sealing contact on the foaming mold, so that the sealing effect is guaranteed directly on those border areas endangered by penetration of foam material.

With one method known from the document US-A-5 654 070 for the foaming of adhesive closing parts on foam body parts, the arrangement of permanent magnets on the foaming mold along the side borders of the adhesive closing parts is already known in and of itself. With this method however adhesive closing parts are used without any sort of ferromagnetic component parts. Instead, with this method special, flexible plastic strips are provided as side sealing strips, which contain a magnetically attractable material in powder form. On the basis of the required precisely adapted application

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of these special sealing strips the execution of this method is costly and not cost-effective.

Preferably with the method of the invention the adhering elements are held during the foaming process in a recess worked in the shaping wall of the foaming mold, over the borders of which the covering overlaps with a predetermined border width sealing off the foam, and the recess is brought into contact with the border areas by means of the holding device.

The covering can be provided with a ferromagnetic coating of polyurethane, as is commercially available under the name SU-9182 from Firma Stahl and contains mixed-in Fe particles of granular size $< 10\mu$ as ferromagnetic material.

As part of the magnetic holding device associated with the foaming mold the permanent magnets can be for example in the form of a series of magnetic rods or magnetic strips, which surround the recess formed in the wall of the foaming mold, in which are held the adhering elements of the adhesive closing part to be inserted in the foam.

Another object is an adhesive closing part which can be foamed into a foam body part, which has the features found in Claim 8.

Hereinafter the invention is to be described in greater detail relative to the drawing. In the drawing are shown :

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- Fig. 1 a diagrammatically simplified perspective view of a foam padding element with adhesive closing part in the foam, seen in perspective view from the end;
- Fig. 2 a view similar to that of Fig. 1 of a foam padding element with an adhesive closing part inserted in a recess in the foam;
- Fig. 3 a partial section indicated in enlarged scale of an adhesive closing part inserted in a foaming mold;
- Fig. 3A a greatly enlarged cutout of the area A of fig. 3;
- Fig. 4 a perspective of a cutout of a foaming mold with inserted adhesive closing part;
- Fig. 5 a diagrammatically simplified perspective view of a mold part which can be inserted into a foaming mold to form a blowhole or channel in the foam, and
- Figs. 6 and 7 perspective views of the mold part of fig. 5 with adhesive closing part partially or completely engaged thereon.

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In the example of Fig. 2, adhesive closing part 3 is embedded in the foam in a recess 7 of foam padding element 1, so that the adhering elements 5 are arranged not flush with the surface.

Figs. 3 and 4 clearly show the foaming-in of adhesive closing part 3 in an arrangement running flush to the surface of foam padding element 1. In this case a foaming mold is used of which the shaping wall 9 has a recess 11 in the area of the adhesive closing part 3, which is adapted to the surface area of adhering elements 5 of adhesive closing part 3, so that with engagement of the same on wall 9 of the foaming mold, adhering elements 5 are received in recess 11. As shown in detail in Fig. 3A, adhering elements 5 are connected by means of an adhesive layer 13 forming a tight adherence with a covering element 15 laid out as a thin lamina on adhesive layer 13. This consists of a material which will enter into good binding with the foam material, for example a fleece or a felt. Covering element 15 extends out with its outer border areas over the surface area of adhering elements 5 and recess 11 constructed in wall 9 of the foaming mold, whereby the overlapping border width of covering element 15 is selected to be such that the border areas overlap the permanent magnets, which are represented in Figs. 3 and 3A as magnetic strips 17. Covering element 15 is provided with a ferromagnetic coating, for example a polyurethane coating with added Fe particles, whereupon ferromagnetic properties are ceded to covering element 15, so that the border areas adhere detachably to magnetic strips 17. This contact of the border areas of covering element 15, around the area of the adhering elements 5 held in the recess 11 of wall 9, forms a foam seal, which during the foaming process prohibits any penetration of the foam material into adhering elements 5.

The tight connection of adhering elements 5 with covering element 15, in deviation from the diagrammatic representation of Fig. 3A, can also occur directly through a polyurethane coating containing ferromagnetic substances, which can be for example the polyurethane SU-9182 of Firma Stahl. Alternatively, an additional adhesive layer 13 can be provided on the ferromagnetic

coating, for example a layer of a moisture-crosslinking polyurethane, for example Tivomelt 9617-11 of Firma Tivoli. As another possibility the construction of covering element 15 in the form of an adhesive base layer directly supporting adhering elements 5 can be considered, for example an adhesive base layer which contains synthetic resin or polyurethane together with ferromagnetic substances.

Fig. 4 shows the use of a plurality of magnetic rods 21 instead of the magnetic strips 17 shown in Figs. 3 and 3A. Magnetic rods 21 in Fig. 4 are arranged in a ring around recess 11 in wall 9 of the foaming mold in such a manner that the edges of the ferromagnetic covering element 15 are held to wall 9 in sealed contact.

Figs. 5 to 7 show in detail the process of the so-called blowhole or channel formation in the foam, whereby adhesive closing part 3 is set into recess 7 of the relevant foam padding part 1. For this purpose a mold part 23 is used which can be anchored to wall 9 of the foaming mold, having the recess 11 worked into its surface, in which can be received and protected the adhering elements 5 of the relevant adhesive closing part 3. On the narrow ends of recess 11 are found magnetic strips 17 for the contact of the narrow side border areas of ferromagnetic covering element 15. As shown in Figs. 6 and 7, its longitudinal side border areas are fitted around the rounded edges 25 of mold part 23, in order to come into foam-sealing contact with side magnetic strips 17.

Patent Claims

1. Method for producing a foam body part, especially a foam padding element (1) provided for a vehicle seat, which is provided with at least one adhesive closing part (3) with adhering elements (5), and the adhesive closing part (3) is arranged in a foaming mold (9) producing the foam body part in such a manner that the adhering elements (5) are protected against penetration of foam by a foam-inhibiting covering (15), which is arranged on the side of the adhesive closing part (3) opposite the adhering elements (5) arranged with a predetermined border width overlapping the surface area of the adhering elements (5) and is brought into detachable contact at least with parts of the foaming mold (9) by means of a magnetic holding device (17; 21), and the covering (15) is provided with a ferromagnetic coating and at least one permanent magnet (17; 21) is provided on the foaming mold (9), characterized in that the covering (15) is provided with a ferromagnetic coating and that permanent magnets (17; 21) are used on the foaming mold (9) in such a layered arrangement that they cooperate with the borders of the covering (15) overlapping the surface area of the adhering elements (5).
2. Method as in Claim 1, characterized in that polyurethane SU-9182 (Firma Stahl) is used as ferromagnetic coating with the addition of Fe particles.

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3. Method as in Claim 2, characterized in that the covering element (15) is connected by adhesive layer (13) with the adhesive closing part (3).
4. Method as in Claims 1 to 3, characterized in that a synthetic resin or polyurethane layer as well as a layer containing ferromagnetic substances is used as covering element (15) forming an adhesive base of the adhesive closing part.
5. Method as in one of the Claims 1 to 4, characterized in that a piece of felt or fleece laid on in a thin lamina is used as covering element (15) on the adhesive closing part.
6. Method as in one of the Claims 1 to 5, characterized in that the adhering elements (5) are held in a recess (11) of the foaming mold (9) and that the covering (15) is arranged with the predetermined border width overlapping the recess (11).
7. Method as in Claim 6, characterized in that for the formation of foam body parts with adhesive closing parts (3) arranged recessed therein a blowhole or channel formation is carried out with mold parts (23) having the recess (11) which as an entirety can be inserted in the foaming mold (9), on which are arranged permanent magnets (17) forming that part of the holding device, so that the borders of the covering element (15) overlapping the recess (11) are held thereon during the foaming process to inhibit foaming.

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8. According to the method as in one of the Claims 1 to 7, /an/ adhesive closing part (3) which can be inserted in a shaped foam body with a covering (15) overlapping the surface area of its adhering elements (5) with a predetermined border width, forms the part of a holding device for the releasable contact on parts of a foaming mold (9) serving for the production of the foam body parts and formed of a fleece or a felt laminated onto the adhesive closing part (3) and is provided with a ferromagnetic coating.

FOOTNOTES

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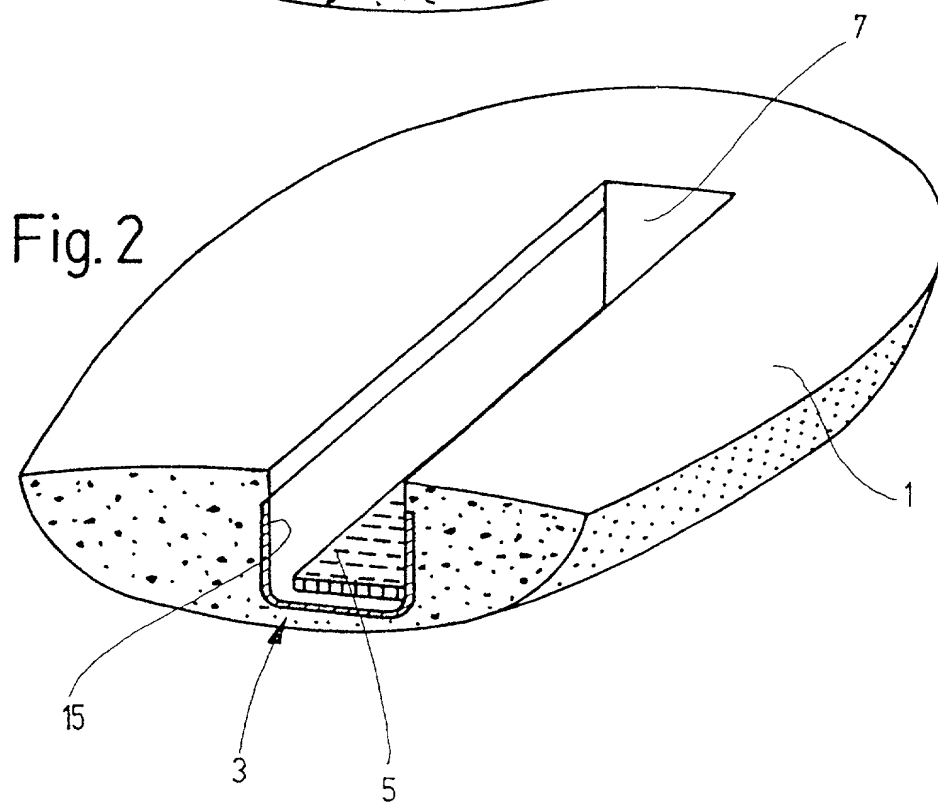
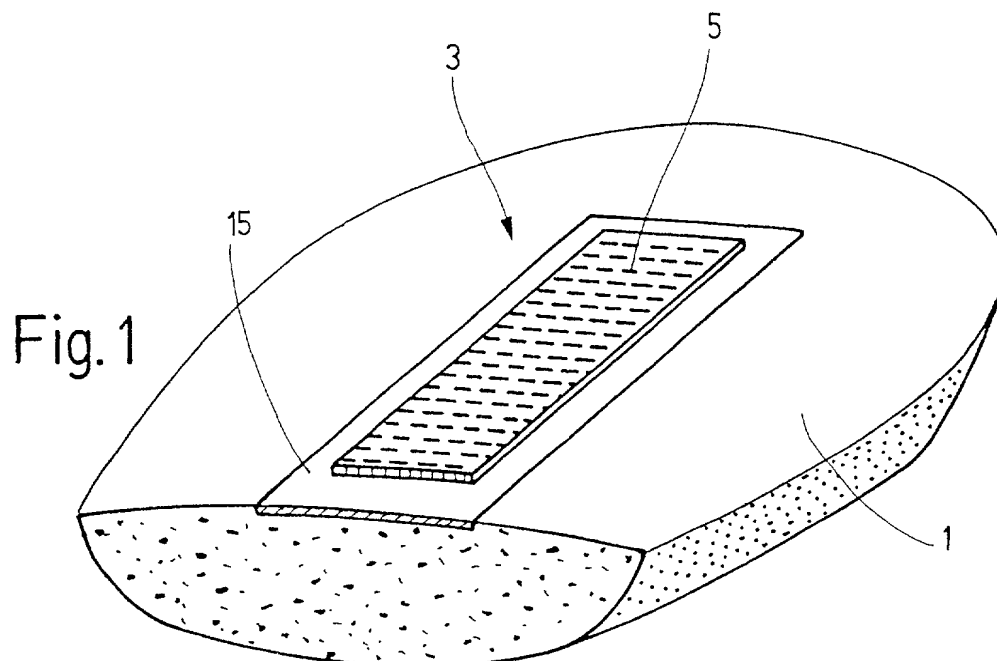


Fig. 3

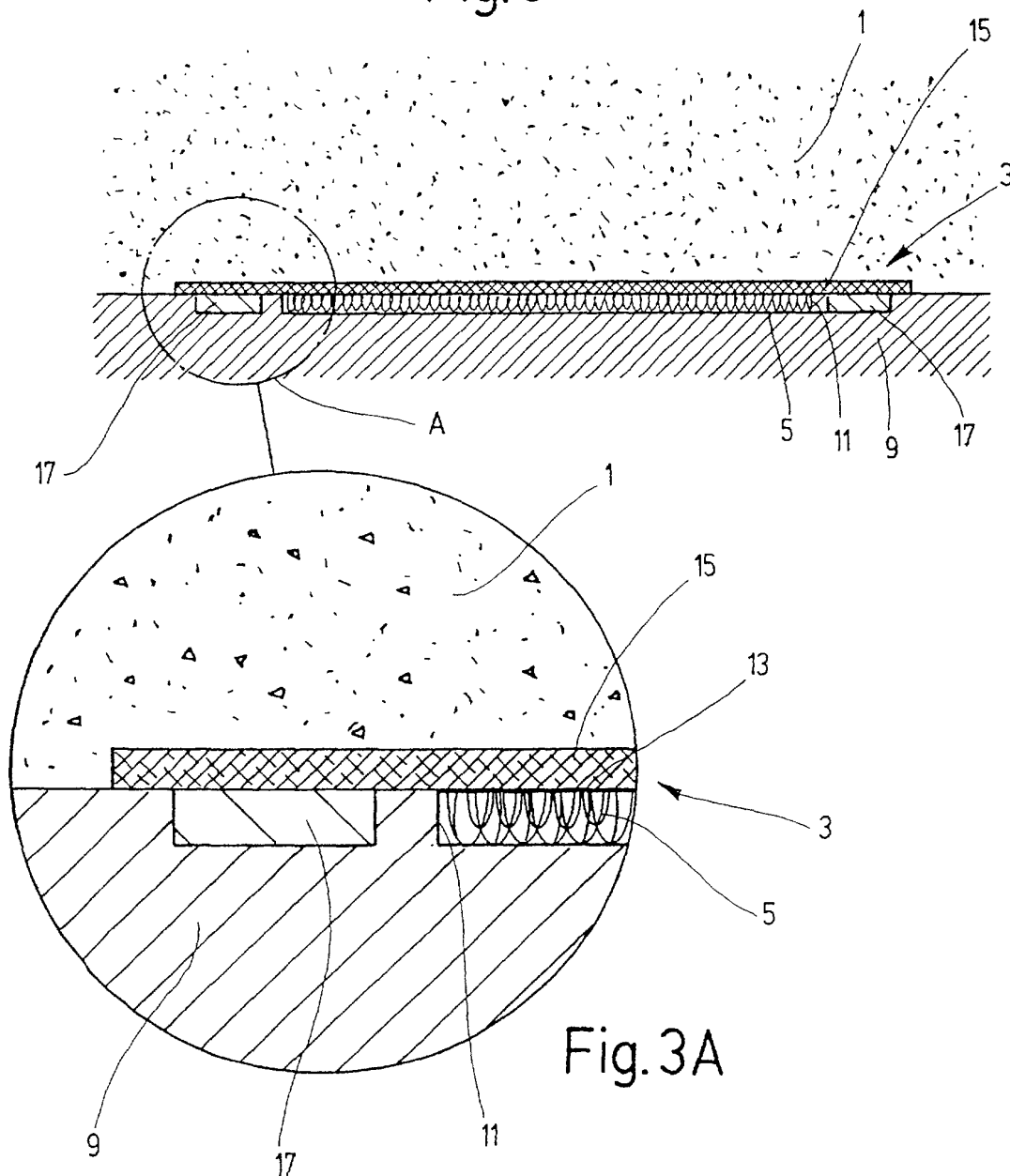


Fig. 3A

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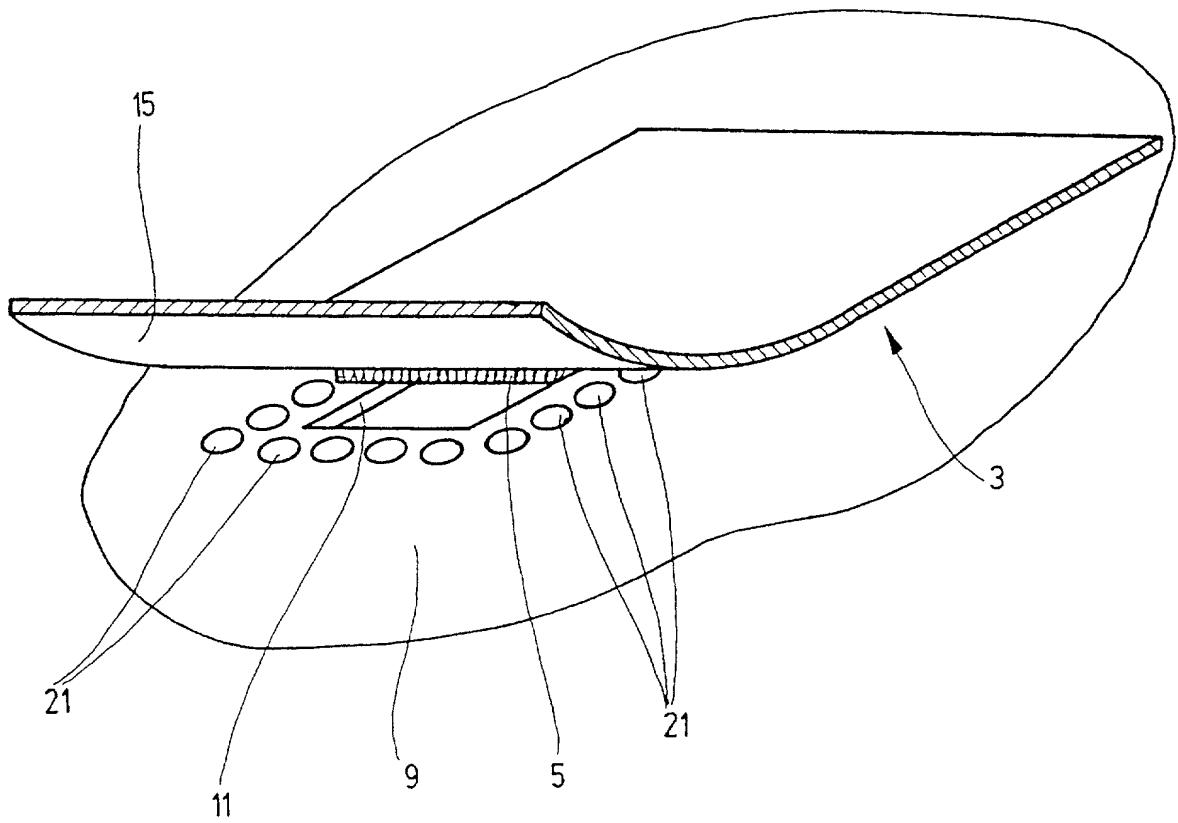


Fig. 4

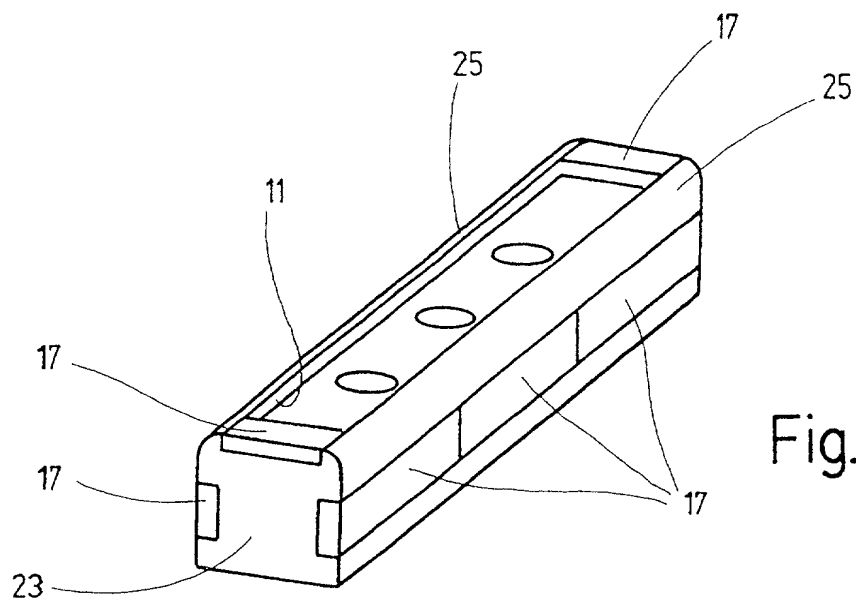


Fig. 5

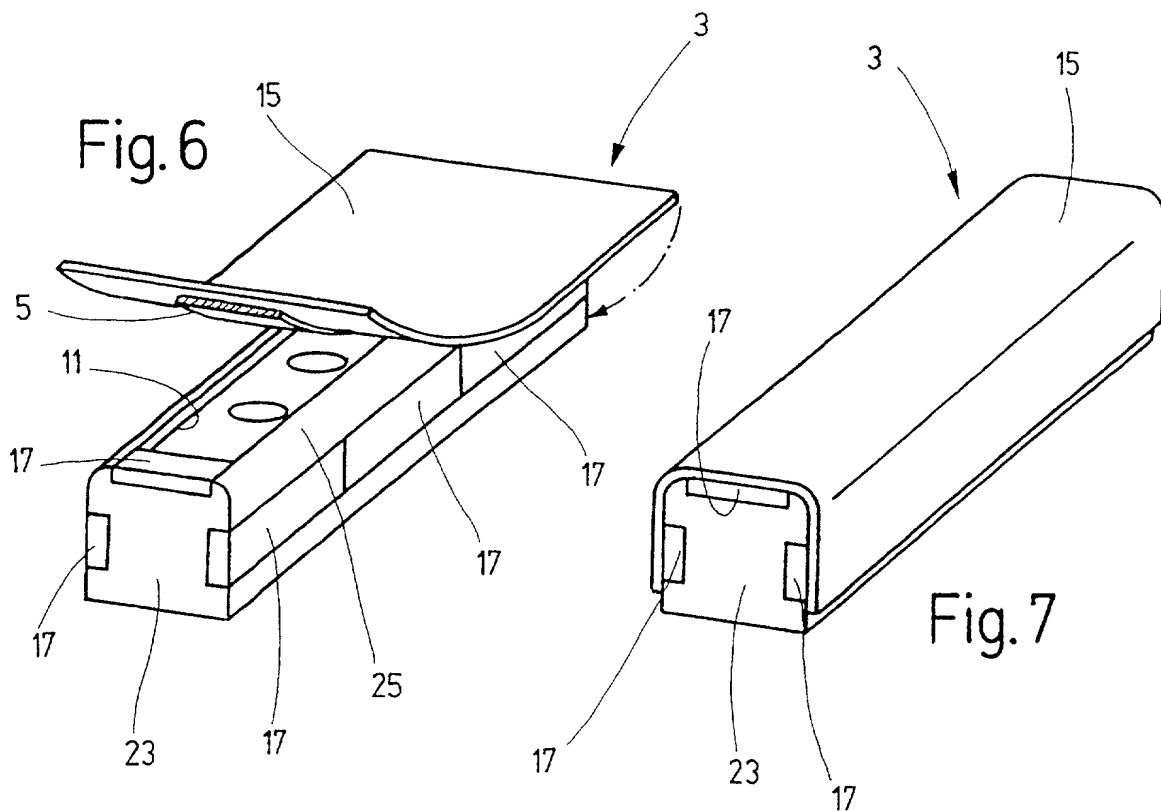


Fig. 6

Fig. 7

Declaration and Power of Attorney for Patent Application

Erklärung für Patentanmeldungen mit Vollmacht

German Language Declaration

Als nachstehend benannter Erfinder erkläre ich hiermit an Eides Statt:

daß mein Wohnsitz, meine Postanschrift und meine Staatsangehörigkeit den im nachstehenden nach meinem Namen aufgeführten Angaben entsprechen, daß ich nach bestem Wissen der ursprüngliche, erste und alleinige Erfinder (falls nachstehend nur ein Name angegeben ist) oder ein ursprünglicher, erster und Miterfinder (falls nachstehend mehrere Namen aufgeführt sind) des Gegenstandes bin, für den dieser Antrag gestellt wird und für den ein Patent für die Erfindung mit folgendem Titel beantragt wird:

deren Beschreibung hier beigelegt ist, es sei denn (in diesem Falle Zutreffendes bitte ankreuzen), diese Erfindung

- ☐ wurde angemeldet am _____
unter der US-Anmeldenummer oder unter der
Internationalen Anmeldenummer im Rahmen des
Vertrags über die Zusammenarbeit auf dem Gebiet
des Patentwesens (PCT)
_____ und am
_____ abgeändert (falls
zutreffend).

Ich bestätige hiermit, daß ich den Inhalt der oben angegebenen Patentanmeldung, einschließlich der Ansprüche, die eventuell durch einen oben erwähnten Zusatzantrag abgeändert wurde, durchgesehen und verstanden habe.

Ich erkenne meine Pflicht zur Offenbarung jeglicher Informationen an, die zur Prüfung der Patentfähigkeit in Einklang mit Titel 37, Code of Federal Regulations, § 1.56 von Belang sind.

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

METHOD FOR PRODUCING A SHAPED

FOAM BODY, ESPECIALLY A FOAM

PADDING ELEMENT FOR A VEHICLE SEAT

the specification of which is attached hereto unless the following box is checked:

- ☒ was filed on August 3, 1998
as United States Application Number or PCT
International Application Number
PCT/EP98/04832 and was amended on
_____ (if applicable).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, § 1.56.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number

German Language Declaration

Ich beanspruche hiermit ausländische Prioritätsvorteile gemäß Title 35, US-Code, § 119 (a)-(d), bzw. § 365(b) aller unten aufgeführten Auslandsanmeldungen für Patente oder Erfinderurkunden, oder § 365(a) aller PCT internationalen Anmeldungen, welche wenigstens ein Land ausser den Vereinigten Staaten von Amerika benennen, und habe nachstehend durch ankreuzen sämtliche Auslandsanmeldungen für Patente bzw. Erfinderurkunden oder PCT internationale Anmeldungen angegeben, deren Anmeldetag dem der Anmeldung, für welche Priorität beansprucht wird, vorangeht.

Prior Foreign Applications
(Frühere ausländische Anmeldungen)

PCT/EP98/04832

WO

(Number)
(Nummer)

(Country)
(Land)

(Number)
(Nummer)

(Country)
(Land)

Ich beanspruche hiermit Prioritätsvorteile unter Title 35, US-Code, § 119(e) aller US-Hilfsanmeldungen wie unten aufgezählt.

(Application No.)
(Aktenzeichen)

(Filing Date)
(Anmeldetag)

(Application No.)
(Aktenzeichen)

(Filing Date)
(Anmeldetag)

Ich beanspruche hiermit die mir unter Title 35, US-Code, § 120 zustehenden Vorteile aller unten aufgeführten US-Patentanmeldungen bzw. § 365(c) aller PCT internationalen Anmeldungen, welche die Vereinigten Staaten von Amerika benennen, und erkenne, insofern der Gegenstand eines jeden früheren Anspruchs dieser Patentanmeldung nicht in einer US-Patentanmeldung, bzw. PCT internationalen Anmeldung in in einer gemäß dem ersten Absatz von Title 35, US-Code, § 112 vorgeschriebenen Art und Weise offenbart wurde, meine Pflicht zur Offenbarung jeglicher Informationen an, die zur Prüfung der Patentfähigkeit in Einklang mit Title 37, Code of Federal Regulations, § 1.56 von Belang sind und die im Zeitraum zwischen dem Anmeldetag der früheren Patentanmeldung und dem nationalen oder im Rahmen des Vertrags über die Zusammenarbeit auf dem Gebiet des Patentwesens (PCT) gültigen internationalen Anmeldetags bekannt geworden sind.

(Application No.)
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(Filing Date)
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(Application No.)
(Aktenzeichen)

(Filing Date)
(Anmeldetag)

Ich erkläre hiermit, daß alle in der vorliegenden Erklärung von mir gemachten Angaben nach bestem Wissen und Gewissen der Wahrheit entsprechen, und ferner daß ich diese eidesstattliche Erklärung in Kenntnis dessen ablege, daß wissentlich und vorsätzlich falsche Angaben oder dergleichen gemäß § 1001, Title 18 des US-Code strafbar sind und mit Geldstrafe und/oder Gefängnis bestraft werden können und daß derartige wissentlich und vorsätzlich falsche Angaben die Rechtswirksamkeit der vorliegenden Patentanmeldung oder eines aufgrund deren erteilten Patentes gefährden können.

I hereby claim foreign priority under Title 35, United States Code, § 119(a)-(d) or § 365(b) of any foreign application(s) for patent or inventor's certificate, or § 365(a) of any PCT International application which designated at least one country other than the United States, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate, or PCT International application having a filing date before that of the application on which priority is claimed.

Priority Not Claimed

Priorität nicht beansprucht

3 August 1998

(Day/Month/Year Filed)
(Tag/Monat/Jahr der Anmeldung)



(Day/Month/Year Filed)
(Tag/Monat/Jahr der Anmeldung)



I hereby claim the benefit under Title 35, United States Code, § 119(e) of any United States provisional application(s) listed below.

I hereby claim the benefit under Title 35, United States Code, § 120 of any United States application(s), or § 365(c) of any PCT International application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of Title 35, United States Code, § 112, I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, § 1.56 which became available between the filing date of the prior application and the national or PCT International filing date of this application.

(Status) (patented, pending, abandoned)
(Status) (patentiert, schwebend, aufgegeben)

(Status) (patented, pending, abandoned)
(Status) (patentiert, schwebend, aufgegeben)

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

German Language Declaration

VERTRETUNGSVOLMACHT: Als benannter Erfinder beauftrage ich hiermit den (die) nachstehend aufgeführten Patentanwalt (Patentanwälte) und/oder Vertreter mit der Verfolgung der vorliegenden Patentanmeldung sowie mit der Abwicklung aller damit verbundenen Angelegenheiten vor dem US-Patent- und Markenamt: (Name(n) und Registrationsnummer(n) auflisten)

10

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith: (list name and registration number)

David S. Abrams Reg. No. 22,576 Lance G. Johnson Reg. No. 32,531
 Robert H. Berdo Reg. No. 19,415 Dean H. Nakamura Reg. No. 33,981
 Alfred N. Goodman Reg. No. 26,458 Stacey J. Longanecker Reg. No. 33,952
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Vor- und Zuname des einzigen oder ersten Erfinders	100	Full name of sole or first inventor	Konstantinos Poulakis
Unterschrift des Erfinders	Datum	Inventor's signature	[Signature] Date DEC 22, 2000
Wohnsitz		Residence	Pulsnitz, Germany DEX
Staatsangehörigkeit		Citizenship	German
Postanschrift		Post Office Address	Kamenzer Strasse 19
			D-01896 Pulsnitz, Germany
Vor- und Zuname des zweiten Miterfinders (falls zutreffend)	200	Full name of second joint inventor, if any	Axel Schulte
Unterschrift des zweiten Erfinders	Datum	Second Inventor's signature	[Signature] Date DEC 22, 2000
Wohnsitz		Residence	Holzgerlingen, Germany DEX
Staatsangehörigkeit		Citizenship	German
Postanschrift		Post Office Address	Karlstrasse 12
			D-71088 Holzgerlingen, Germany

(Im Falle dritter und weiterer Miterfinder sind die entsprechenden Informationen und Unterschriften hinzuzufügen.)

(Supply similar information and signature for third and subsequent joint inventors.)